Basic Photography

By

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Welcome!!

- Introductions
- Level of experience
- Goals and expectations

Exposure modes

- Full auto – The camera takes control.
- AV/A – see below for class
- TV/S – You control shutter speed, camera controls everything else.
- Manual – Ultimate control over all settings.

DEFINITIONS

APERTURE

- Lens aperture is a measurement of how much light your camera's lens is capturing. It's a key part of getting proper exposure in your photos, and it allows you to control depth of field. Aperture is often referred to as f/stop. The smaller the number, the larger the aperture opening.

DEPTH OF FIELD

- **Depth of field** is the amount of distance between the nearest and farthest objects that appear in focus in a photograph. A preferred Depth of field ("DOF") in an image can be quite subjective. Remember this, adequate selection of DOF for one situation or application may be unacceptable for another photographer. It is all a matter of personal preference when trying to determine the appropriate use of DOF to enhance an object in a photograph.

APERTURE PRIORITY

- Often it has a symbol of ‘A’ or Av’ to indicate it’s selected. In this mode, you as the photographer sets the aperture that you wish to use, but the camera decides what shutter speed is appropriate in the conditions that you’re shooting in.

- Use AV/A with regards to Depth of Field (DOF). As a result use Aperture Priority Mode when attempting to have some control in this area. If you want a shallow DOF (for example a flower in focus but the background nice and blurred) select a large aperture, for example f/2.8, and let the camera choose an appropriate shutter speed. If want an image with everything in focus pick a smaller aperture (for example f/22) and let the camera choose an appropriate shutter speed.

Aperture and depth of field

f/4.5, 1/250, ISO-200

f/40, 1/3, ISO-200

SHUTTER SPEED

- Defined most basically – shutter speed is ‘the amount of time that the shutter is open’.
  In film photography it was the length of time that the film was exposed to the scene you’re photographing. Similarly in digital photography shutter speed is the length of time that your image sensor ‘sees’ the scene you’re attempting to capture.

SHUTTER PRIORITY

- Typically uses a symbol of Tv or S. In this mode you as the photographer choose the shutter speed that you wish to shoot at and let the camera make a decision about what aperture to select to give a well exposed shot.

  The main impact of different shutter speeds is how ‘movement’ is captured in your images. As a result most people switch to shutter priority mode when they want more control over how to photograph a moving subject.

Exposure

- The amount of light that is allowed to reach the camera's sensor to create a photograph
- Controlled by shutter speed (the length of time the shutter is open)
- Controlled by aperture (the size of the opening through which light enters)
- Somewhat controlled by ISO which changes the sensitivity of the sensor to light (used to modify exposure)

ISO

- Most misunderstood term in your camera settings!!
- In film photography: ISO (or ASA) was the indication of how sensitive a film was to light. It was measured in numbers (you've probably seen them on films – 100, 200, 400, 800 etc). The lower the number the lower the sensitivity of the film and the finer the grain in the shots you're taking.

- In Digital Photography ISO measures the sensitivity of the image sensor. The same principles apply as in film photography – the lower the number the less sensitive your camera is to light and the finer the grain.

- Higher ISO settings are generally used in darker situations to get faster shutter speeds. For example an indoor sports event when you want to freeze the action in lower light. However the higher the ISO you choose the noisier shots you will get.

WHITE BALANCE

- At its simplest – the reason we adjust white balance is to get the colors in your images as accurate as possible.

- You might have noticed at times images can come out with an orange, blue, yellow etc look to them – despite the fact that to the naked eye the scene looked quite normal. The reason for this is that images from different sources of light have a different ‘color’ (or temperature) to them. Fluorescent lighting adds a bluish cast to photos whereas tungsten (incandescent/bulbs) lights add a yellowish tinge to photos.

White Balance using Kelvin

Light Type	Color Temperature in Kelvin (K)
Candle Flame	1,000 to 2,000
Household Lighting	2,500 to 3,500
Sunrise and Sunset	3,000 to 4,000
Sunlight and Flash	5,000 to 6,000
Noon Sun and Clear Sky	6,000 to 6,500
Cloudy Sky and Shades	6,500 to 8,000
Heavily Overcast Sky	9,000 to 10,000

White Balance Pre-Sets

- **Auto (A)** – Default WB setting. The camera automatically guesses the WB depending on ambient light and use of flash.
- **Tungsten (Light Bulb)** – Use it strictly under tungsten light bulbs or the image will look very blue.
- **Fluorescent (Glowing Tube)** – Use if photos look too green or when under fluorescent lights.
- **Direct Sunlight (Sun)** – Used when shooting outdoors with the sun shining on the subject.
- **Flash (Lightning Bolt)** – Used when using on-camera flash.
- **Cloudy (Cloud)** – Used in cloudy days or in shades. Will yield warmer images than sunlight.
- **Shade (House with a Shadow)** – Warmer than cloudy, adding orange colors to the photograph. Good for sunsets and shades.
- **Continuously Variable (K)** – Lets you manually change the Kelvin value from 2,500 to 10,000.
- **Preset (PRE)** – Used for color matching with a white card.

Resolution

- The ability of a system to reproduce details present in a subject so that they are in the image, measured by the total number of usable pixels for digital cameras. In general, the higher the pixel count, the more detail that is able to be captured in an image.

EXPLAINED THE EXPOSURE TRIANGLE

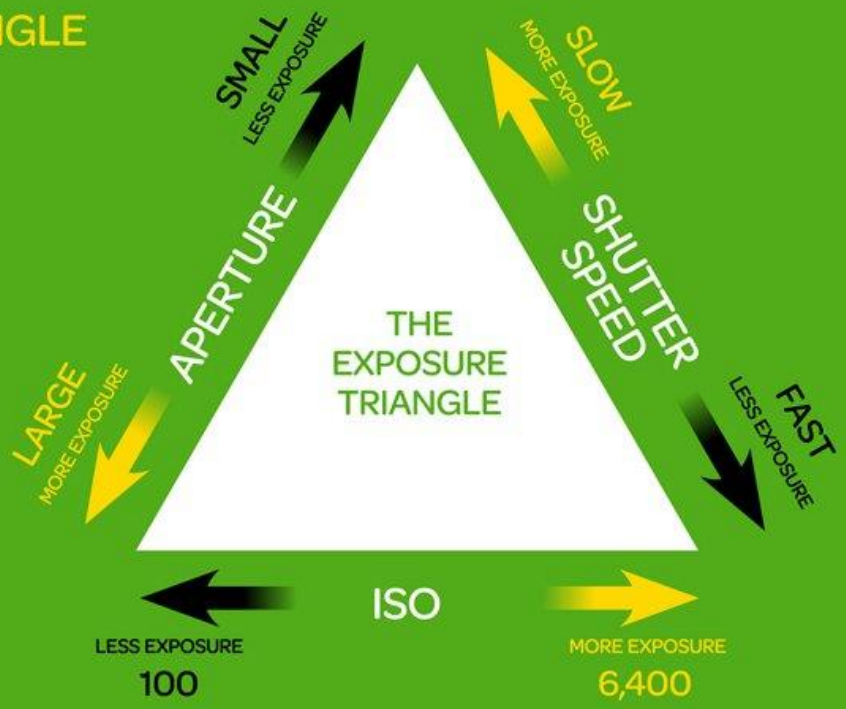
Knowing the effect you want to achieve will determine which exposure setting you need to choose first

In addition to their role in exposure, the choice of aperture, shutter speed and ISO have a significant impact on the look and feel of your pictures. Aperture, for instance, affects the depth of field, or how much of an image appears sharp. Shutter speed also affects image sharpness, with slower shutter speeds leading to blurred images – whether that's caused by the subject moving or the camera not being held still.

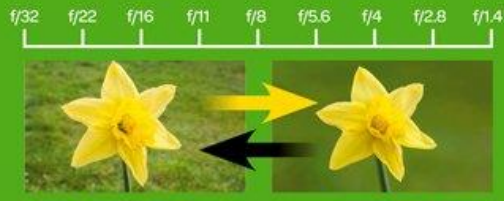
The choice of ISO enables you to use the optimum combination of aperture and shutter speed when the amount of light would normally prevent you from doing so. However, increasing the ISO also reduces the quality of your images.

Use the exposure triangle (right) to decide how to adjust the exposure: the key is that when you increase the exposure for one element (a yellow arrow), you need to reduce it for one or both of the other elements (the grey arrows) in order to maintain the same exposure. The camera can do this for you in Program, Aperture Priority or Shutter Priority, but it's something you'll need to consider when shooting in Manual mode.

Get the hang of this relationship, and you'll gain much more control over the look and feel of every image you capture.



APERTURE



As you adjust the aperture, the depth of field changes, affecting how much of the shot is in focus.

SHUTTER SPEED

Adjusting the shutter speed changes how moving subjects are recorded and affects how camera-shake is recorded.

ISO

Adjusting the ISO or light sensitivity affects how much light the sensor needs, but can introduce visual noise.

Using ISO to control shutter speed

ISO-100, 1/100 sec, f/16

ISO-2500, 1/2000 sec, f/16

Over and Under Exposure

Over and Under Exposure

Know your camera

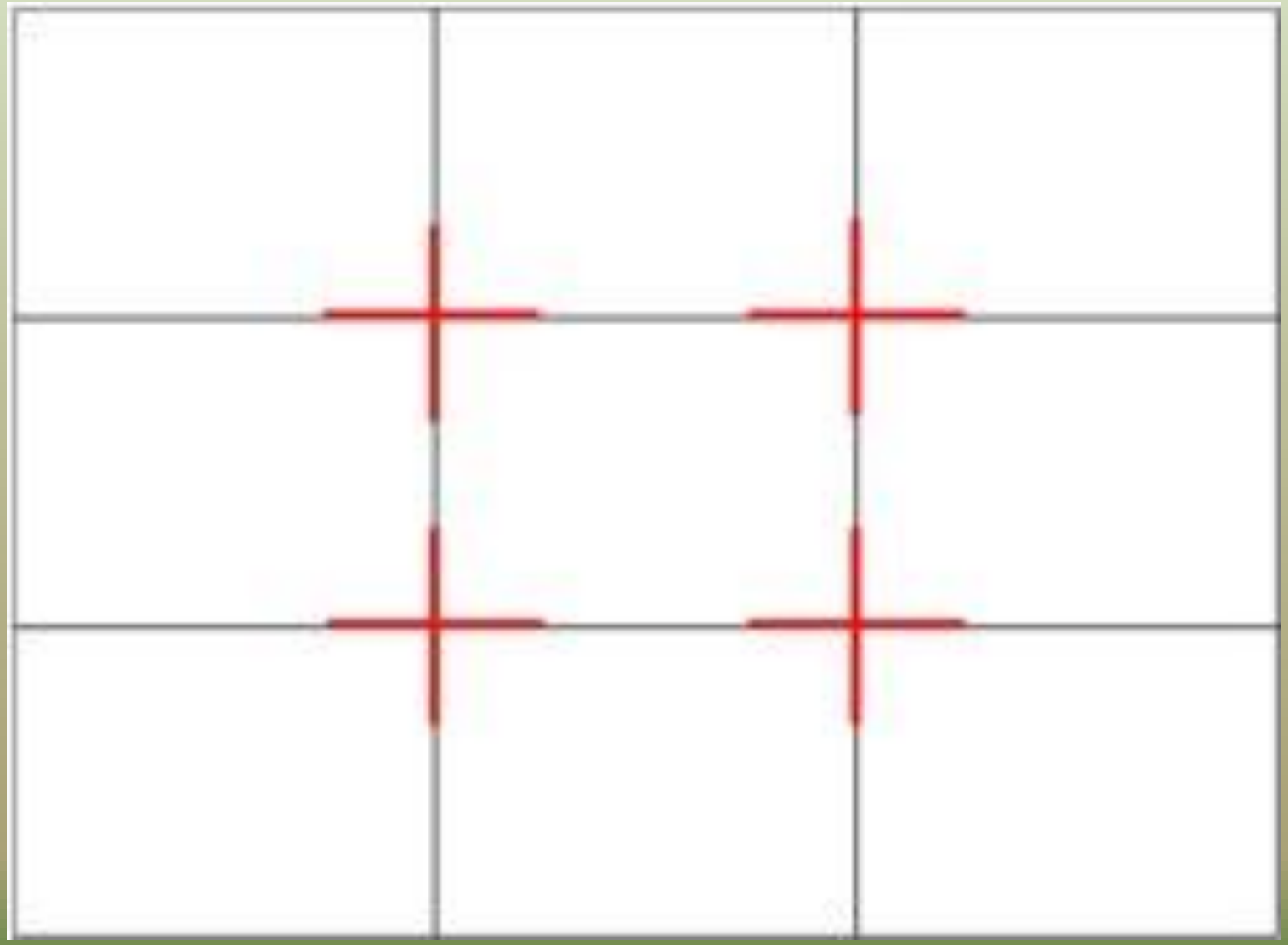
- What kinds of cameras are here?
- Don’t dismiss your phone camera!

Focal point

- You may have to use manual focus if auto focus is locking onto something other than your focal point. Most cameras have focal-lock option where you press shutter button halfway down to focus, recompose the shot while continuing to hold halfway down, then press to take the image.

Composition

- **Rule of thirds – don't always center the subject**
- Leading lines – draws your eye into image
- Fill the frame – exactly what it says. Don't shoot too far away and get too much distraction or uninteresting clutter.
- Patterns interrupted – yellow umbrellas with one red, etc.
- Use natural frames such as windows or archways
- Move around for different perspective.
- Shoot from above using stairs or a bridge, etc.

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WEST BANK
LOYALISTS
STILL
UNDER SIEGE
NO SURRENDER

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- **Shoot from above using stairs or a bridge, etc.**

- Watch for distractions like power lines, air conditioners, satellite dishes, etc.
- Work the scene from all angles: shoot wide, shoot tall, zoom in, zoom out, move around, tilt the camera, shoot from above, shoot low, shoot very low. Tripods will splay out to ground level.
- Only set up tripod after you have thoroughly worked the scene.
- Check your photos before you leave the scene to be sure you have what you want.
- You may have to return to a setting more than once to get your ideal shot.

Sharpness – Achieving tack-sharp images

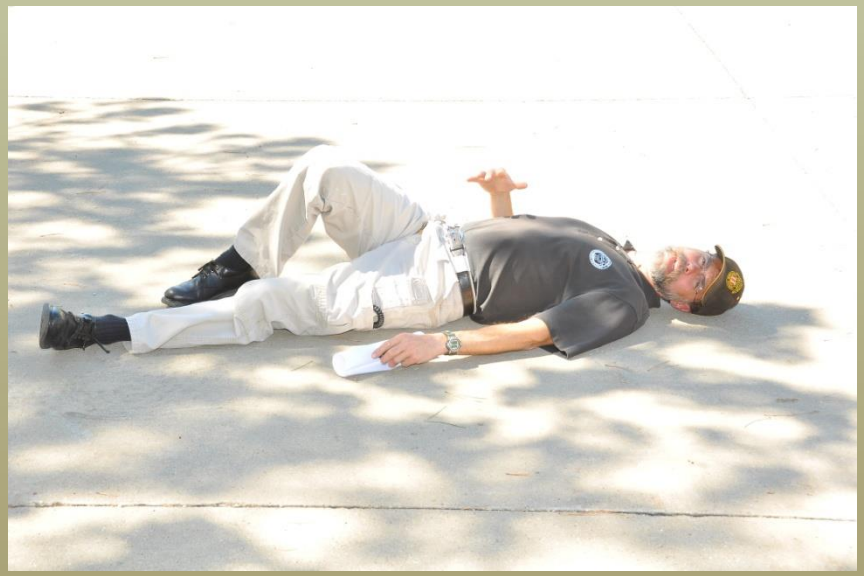
- Use a tripod
- Use remote shutter release or built-in timer
- Even pressing the shutter button causes movement
- If on tripod, turn off image stabilization.
- Zoom in to 100% on LCD screen to check for sharpness of your taken images periodically. You don’t want to leave the scene without a good photo.
- Take some more shots!
- Sharpen images in editing software.

Lighting

- Many ways to manipulate light such as reflectors and fill light. Choosing your environment and kind of light and camera settings is the difference between and great photo, a dark photo or a blown-out photo. Don’t be afraid to use a flash, even on a sunny day.

Aperture and exposure

f/10, 1/60, ISO-200, w/flash



f/18, 1/60, ISO-200, w/flash

Aperture Priority should be the focus for today – AV for Canon, A for Nikon

- Size of shutter opening measured in f-stops
- Controls amount of light
- Controls depth of field for amount of blur in front of and behind focal point.
- Wide-open aperture gets more blur (smaller value); smaller opening (larger value) gets more in focus. f/22, pretty much everything in focus.
- You set aperture, camera sets everything else.
- Choose smallest number (wide-open aperture) for Macro Shots unless using a tripod.
- Choose larger number, like f/22, for landscapes.

Time for taking some shots!

- Take macro, landscape and action of other participants
- Bring back two versions of each type of photo, choosing only the two best of each type of photo you take. (become a good editor of your own photos, choosing only the best to show others!)